National Institute of Environmental Health Sciences

The relationship of short-term air pollution and weather to ED visits for asthma in Japan

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Abstract:

INTRODUCTION: The incidence of asthma exacerbation has been increasing in many countries. Environmental factors may play an important role in this trend. We aimed to investigate the relationship of weather conditions and air pollution to significant exacerbation of asthma. METHODS: The daily number of emergency department (ED) visits by ambulance for asthma was collected through records of the Tokyo Fire Department from January 1 to December 31, 2005. We also collected daily air pollution levels and meteorological data for Tokyo during the same period. Meteorological data included minimum temperature, maximum barometric pressure, maximum relative humidity, and precipitation. Measured air pollutants included sulfur dioxide, nitrogen monoxide, nitrogen oxides, suspended particulate matter, and carbon monoxide. We performed a time series analysis using multivariable-adjusted autoregressive integrated moving average model. The analysis was conducted separately among adults and among children (

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors, Meteorological Factors, Precipitation

Air Pollution: Interaction with Temperature, Particulate Matter, Other Air Pollution

Air Pollution (other): SO2, NO, NOx, CO

Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal, Urban

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Japan

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Respiratory Effect

Respiratory Effect: Asthma, Other Respiratory Effect

Respiratory Condition (other) : daily number of emergency department (ED) visits by ambulance for asthma

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified